

## Expanding the list of W Virginis variable stars

As of August 2013, the VSX database contains 252 records of CWA variables with only 32 of them known in the Northern hemisphere. Here are two new CWA stars presented, discovered by the VS-COMPAS team members: NSVS 13622006 and 2MASS J18144389+5531238.

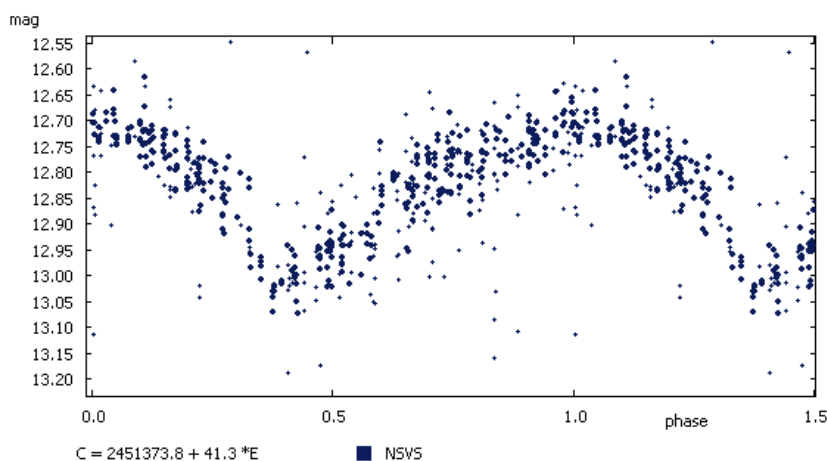
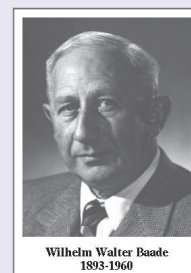
W Virginis variables are a subclass of Type II Cepheids which exhibit pulsation periods more than 8 days. They were first recognized as being distinct from classical Cepheids by Walter Baade in 1942, in a study of Cepheids in the Andromeda Galaxy that proposed that stars in that galaxy were of two populations. The variability of W Virginis itself was discovered by Eduard Schönfeld, assistant to Argelander, in 1866.

Most of known, nearly 85%, CWA variables have periods less than 25 days. VS-COMPAS team found two new W Virginis variables with periods 38.56 and 41.3 days. Only 11 confirmed CWA stars in the whole VSX database have periods larger than 35 days, means those objects found recently are at least notable ones.

2MASS J18144389+5531238 (see the folded light curve below) in the constellation of Draco has a period of 41.3 days. The stars with periods greater than 20 days often have RV Tauri characteristics, and it is difficult to distinguish W Virginis, RV Tauri and SRd variables.

### Walter Baade

(1893 – 1960) - a German astronomer. During his work at Mount Wilson Observatory he resolved stars in the center of the Andromeda galaxy for the first time. This led him to define distinct "populations" for stars: Population I and Population II.



**2MASS J18144389+5531238** with the period of 41.3 days shows a typical "flat-topped" curve.  
by Ivan Sergej, Andrey Prokopovich (VS-COMPAS)

Below you can find some details about two presented CWA stars. NSVS 13622006 exhibits quite a large amplitude of 1.0m in visual band.

Object Designation	RA (J2000)	DEC (J2000)	Type	Epoch *	Period	Mag. Range
<b>NSVS 13622006</b>	17 03 08.72	-05 18 50.2	CWA	1341.0	38.56	13.8 - 14.8 V
<b>2MASS J18144389+5531238</b>	18 14 43.90	+55 31 23.8	CWA	1373.8	41.3	12.68 - 13.02 R1

\* Epoch is given as HJD-2450000

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